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AUTHOR Lanese, James

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ABSTRACT

The Reinforcement Science Skills Project of the Cleveland Public Schools is designed to meet the science education needs of urban elementary and junior high school students. The project provides specially designated materials and teacher training in their use at selected and inservice sessions for teachers in nontargeted schools. Results at the elementary level in 1982-83 indicate that (1) 65.2 percent of fifth graders in the selected schools showed a pre-posttest gain of 10 percent on a locally developed test measuring understanding of physical science concepts; (2) although responses to the inservice sessions for teachers from the selected schools were positive, they fell short of the objective level of 80 percent; (3) at least 80 percent of the elementary science teachers in grade 5 who took part in a series of inservice workshops rated them as successful; and (4) elementary science teachers in the nontargeted schools received appropriate inservice training. Results at the secondary level show that students at the selected schools did not attain the targeted gain of a pre-posttest measure of their achievement; junior high school teachers received appropriate inservice training; and the inservice training was judged by at least 80 percent of those receiving it to be successful. (CMG)

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REINFORCEMENT SCIENCE SKILLS PROJECT

DISADVANTAGED PUPIL PROGRAM FUND

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1982-1983
FINAL EVALUATION REPORT

Prepared by
James Lanese
Evaluator

Typed by

Eleanor Haithcox

UD 023 171

Cleveland Public Schools
RESEARCH AND ANALYSIS DEPARTMENT

July, 1983

REINFORCEMENT SCIENCE SKILLS PROJECT

1982-1983 DPPF Final Evaluation

PURPOSE AND OVERVIEW

The Reinforcement Science Skills Project is designed to meet the science education needs of the urban student at the elementary and junior high school level. The provision of specially designated materials and teacher training in their use is the primary approach utilized to enhance the science curriculum for students in selected schools in grades 1 through 8. Also inservice sessions for teachers in non-targeted schools is provided.

SERVICE SUMMARY

Pupils Served : 6800 elementary
1000 secondary

Grades: 1-8

Years in operation: 15

Schools: 87 elementary
23 junior highs
109 total

Staffing:
1 Project Manager FT
2 Consultant Teachers FT
2 Clerks FT

TOTAL DPPF Expenditures:

Per Pupil Cost:

SUMMARY OF FINDINGS

The four elementary and three secondary objectives of the Reinforcement Science Skills project for the 1982-1983 academic year provided for the enhancement of the delivery of science instruction to students for grades 1 through 8 through the provision of materials and teacher training in the area of science instruction. Grades 5 and 7 were targeted (in selected schools) for the SCIS II Energy Sources Kit and the Life Science Kits for the intensive services while all schools availed themselves of inservice consultation and workshop activities.

At the elementary level, two objectives were partially attained while two were completely attained. The project's one product objective achieved well above the targeted gain score (18.30% as opposed to 10.0%) yet the targeted gain was only achieved by 65.2% of the sample tested. The concentrated inservice objective was also partially achieved by 65.2% of the sample tested. The concentrated inservice objective was also partially achieved insofar as the targeted response level was narrowly missed. The provision of consultative service for the "non-concentrated" school was successful.

At the secondary level, one objective was not achieved while two were achieved. Students at the five schools chosen to participate in the concentrated service aspect of the project did not attain the targeted gain of a pre-post measure of their achievement. The provision of teacher training through workshops and consultative visits were very successful for secondary project participants.

OBJECTIVES AND OUTCOMES

. Objective 1: At least 75% of the grade five children in the 15 schools receiving concentrated services will show a pre-post gain of 10% on a locally developed test measuring understanding of physical science concepts (as result of using the SCIS II--Energy Source Lab.)

. Outcome: The objective has been partially achieved.

The recipients of the concentrated inservice and implementation-assistance were identified prior to the end of the first semester. A list of schools participating in the SCIS II Energy Sources Labs is contained in Appendix A.

In January, 1983, testing materials and instructions were distributed to project teachers in the 15 selected schools for pre-testing. Teachers administered the pre-test during the first week of the second semester to provide data for the assessment of the first objective. Approximately 1150 fifth grade students were tested at the start of the SCIS Energy Sources Lab project which operated throughout the course of the second semester.

During the seventeenth week of the second semester, the locally developed post-test was administered to 783 project students. A pre-to-post test matching procedure yielded a sample of 687 matched record for assessment of the objective. Table 1 contains a summary of the test results. While the entire test sample evidences a pre-to-post mean score gain of 18.30 percent (well above the objective 10 percent) the frequency distribution of individual performance indicates that 65.2 percent of the sample tested gained 10 or more percent on pre-to-post test administrations during the project duration.

TABLE 1

Grade 5 Project Students Test Results

TEST	N	MEAN SCORE	GAIN	Percent of Sample Gaining 10.0%
	687	44.30		
			18.30	65.2
Post	687	62.60		

. Objective 2: At least 80 percent of the Grade 5 teachers receiving concentrated inservice and implementation assistance for using SCIS--II Energy Sources Labs will state that the:

. "hands-on" approach has value for teaching science to disadvantaged students.

- inservice has prepared them to use the SCIS II-Energy Source lab in their classroom with students.
- inservice methods and implementation assistance were comprehensive and appropriate.

. Outcome: This objective was partially attained.

Project teachers in the fifteen schools selected from the poverty eligibility list did receive concentrated preservice and project implementation assistance on January 11, 1983 (See Appendix A for a list of the participating elementary schools).

The preservice session was attended by 34 teachers who reacted to the session as reported on Table 2. (A copy of the reaction sheet is contained in Appendix B.)

TABLE 2

MEAN RESPONSE VALUE - ELEMENTARY PRESERVICE

N=34 Scale = 1-5 (positive)

ITEM	RESPONSE TOPIC	X
1	Clarity of purpose	4.79
2	Content understandable	4.97
3	Sufficiency of time	4.91
4	Opportunity to interact	4.66
5	Effectiveness of discussion	4.63
6	Acquisition of new knowledge	4.65
7	Practicality of Information	4.71

The immediate response to the preservice session was most favorable. However, to address the specific issues identified in the stated objective, a survey of project teachers was conducted at the project's conclusion concerning the three aspects of the SCIS II Energy Sources Labs mentioned above.

Table 3 illustrates the summary of responses to the project teacher survey. A copy of the survey instrument is included in Appendix D.

TABLE 3

Project Teacher Responses to the Three Stated Objective Items
(N=27)

ITEM	Yes responses (%)	NO responses %	Did not Respond
The SCIS II "hands on" approach is of value for teaching science to disadvantaged students.	24 (89)	0 (0)	3 (11)
The inservice prepared use the SCIS II kits in your classroom.	21 (78)	2 (7)	4 (15)
The inservice methods and implementation assistance were appropriate and comprehensive.	20 (74)	3 (11)	4 (15)

The responses stated above indicate a most favorable reaction to the SCIS II kit for use in the elementary classroom and to the inservice sessions. Responses to the inservice sessions and the methods used in the sessions were most positive, however did fall short of the objective 80 percent level.

- Objective 3: 80% of the teachers of elementary science in grade 5 who participated in a series of inservice workshops on instructional techniques for classroom use and continuing supplementary materials will assign these workshops a rating of a least 4 on a 5 point scale measuring adequacy of the information, practicality of the information, opportunity for participation etc.

  - Outcome: This objective has been achieved.

Sixteen workshops were conducted during the 1982-83 academic year. The location, participation, and reaction records for each of these workshops is summarized in Table 4. (A copy of the evaluation form is contained in Appendix B.)

An analysis of the Mean Response values for each session and in total indicates that the objective has been achieved. Individual item response means and standards deviations were computed for each meeting. These values (though not reported here) would indicate that 80% or more of the respondents rated the sessions with at least 4 on a 5 point scale.

Table 4

MEAN RESPONSE VALUES - ELEMENTARY INSERVICE

Scale = 1-5 (positive)

DATE	SCHOOL	Clarity of Purpose	Understand Ability	Sufficiency of Time	Discussion Effectiveness	Acquisition of New Knowledge	Practicality of Information	Session Beneficial	
11-10-82	Chas Orr	5.00	5.00	4.78	5.00	5.00	5.00	5.00	9
11-17-82	Robert Fulton	4.79	4.97	4.91	4.66	4.65	4.71	4.88	19
11-18-82	FCE	4.69	4.73	3.92	3.70	3.96	4.54	4.54	26
11-19-82	Gordon	4.50	4.60	4.70	4.40	4.11	4.40	4.40	10
11-19-82	Wm. C. Bryant	5.00	5.00	5.00	4.67	3.67	4.00	4.67	3
12-03-82	Wm C Bryant	4.85	5.00	5.00	4.83	4.43	5.00	4.86	7
12-14-82	D. Morgan	5.00	4.63	2,89	3.94	4.05	4.94	4.94	11
01-19-83	Tremont	4.70	4.70	3.20	4.16	4.25	4.45	4.21	20
02-08-83	Giddings	4.67	4.75	3.75	4.22	4.22	4.66	4.56	9
02-17-83	Wm Harper	4.81	4.81	4.81	4.42	4.56	4.81	4.81	16
03-02-83	A. Rickoff	4.95	4.86	3.50	4.18	4.35	4.80	4.80	21
03-16-83	Tremont	4.83	4.80	4.45	4.41	4.41	4.76	4.62	29
04-13-83	B. Woodland	4.85	4.85	4.62	4.34	4.50	4.50	4.50	21
04-19-83	Woodland Hills	5.00	4.60	4.40	4.80	5.00	4.60	4.80	5
04-20-83	Bolton	4.92	4.92	4.21	4.46	4.56	4.80	4.80	25
06-01-83	A. Wayne	4.94	4.94	4.88	4.63	4.50	4.75	4.75	16
*Summary		4.84	4.81	4.59	4.42	4.68	4.67	4.68	--

*Average of all reported Mean Response Values

- Objective 4: Elementary teachers of the schools not identified as one of the 15 concentration schools will receive inservice training focused on skills needed to implement:

  - primary and upper elementary science curriculum
  - lesson plan structure
  - Outcome: This objective has been achieved.

    Project records indicate that every elementary school in the system was visited by the elementary consultant teacher at least once during the first year. Elementary school/teacher visits were designed to focus upon the requisite skills needed to implement the science curriculum and lesson planning by conferring with the individual teachers or small groups of elementary teachers.

- Objective 1 (Secondary): At least 75% of grade seven students in the schools receiving concentrated services in life science will show a pre-post gain of 10% on a locally developed test measuring understanding of cell and plant concepts.

  - Outcome: This objective was not achieved.

The project consultant and evaluator developed, produced, and distributed pre-test materials to project teachers for pre-testing during the week of January 31, 1983. Life Science laboratory kits were distributed to the five project schools which had been targeted for concentrated service. The project functioned at five schools for six weeks during the second semester.

Post-test materials and instructions were distributed (as above) to the focal schools for administration upon the completion of the project. Approximately 350 students at Charles Mooney, Harry E. Davis, Thomas Jefferson, Willson, and Charles Elliot junior high schools comprised the the population for concentrated services by the secondary consultant.

Test results were organized for a pre-post analysis which yielded a sample of 178 matched pairs. Table 5 contains a summary of the results of the analysis. The tested sample of project participants evidenced an average gain of 8.45 percent with 43.7 percent of the sample population gaining 10.0 percent or more on the pre-to-post test exercise. Neither of the stated criteria were achieved for this objective.

TABLE 5

Secondary Project Student's Life Science Test Results

TEST	N	MEAN SCORE (%)	GAIN(%)	PERCENT OF SAMPLE GAINING 10.0%
Pre	178	34.92	8.45	43.7
Post	178	43.37		

. Objective 2 (Secondary): Junior high school teachers will receive inservice training focused on skills needed to:

. integrate Reading Skills and Science content

. implement lesson plan structure

. improve methodology

. accomodate students having difficulty in achieving science objectives

These skills will be used by teachers to improve students individual achievement.

. Outcome: This objective was achieved.

During November, 1982 two inservice sessions were scheduled for "Structured Lesson Plans in Science" and "Integration of Reading Skills in Science". Reactions to the inservice sessions to date are reported in Tables 6 and 7. Mean response values reported for each of the areas mentioned in the objective exceed 4.00 on a response scale of 1.00 to 5.00. In each case, a clear majority of the respondents (78-88 percent of the sample) rated the objective component of the positively (X 40). Additionally, two workshops were conducted during the second semester in February and March for the project. Improvement of instructional methodology and the accomodation of students with achievement difficulties were the topics of primary discussion at the two initial meetings of the second semester. Rating instruments were not analyzed for these sessions.

. Objective 3 (Secondary): At least 80 percent of the teachers receiving inservice through the secondary teacher consultant will assign the service rating of at least 4 on a 5 point scale measuring the extent to which the visits helped them to:

SUMMARY OF RESULTS
TABLE 6

MEAN VALUES OF REACTION
SPECIFIC INSERVICE TOPICS
Scale = 1-5 (positive)

RESPONSE TOPIC	NUMBER OF RESPONDENTS	% Rating 4 or 5	X
Clarity of understanding the DPPF project	34	88	4.67
Thoroughness of protest objective knowledge	16	88	4.50
Practicality of Science	16	81	4.56
Ability to incorporate process skills in daily science teaching	14	79	4.19
Ability to incorporate science teaching methods into classroom management strategies	18	70	4.22

Table 7
MEAN VALUES REACTION TO GENERAL
INSERVICE TOPICS
SCALE = 1-5 (positive)
WORKSHOPS I and II

ITEM	RESPONSE TOPIC	NUMBER OF RESPONDENTS	X
1.	Clarity of purpose	34	4.73
2.	Content understandable	34	4.50
3.	Sufficiency of time	34	4.33
4.	Opportunity of interest	34	4.29
5.	Acquisition of new knowledge	34	4.17
6.	Practicality of information	34	4.56
7.	Session beneficial	34	4.57

- integrate Reading skills with science content
- implement their teaching methodology
- incorporate process skills in daily planning and teaching with emphasis in grades 7-9

The teacher evlauation will be used to refine the services to students in subsequent years.

- Outcome: This objective has been achieved.

The project's secondary consultant has made 303* junior high school building visits throughout the academic year. These visits involved 324* teacher conferences to strengthen skills in the areas specified by the objectives stated above. Additionally, 108 senior high school visits involving 64* individual teacher conferences were completed during the school year.

Near the close of the second semester, a questionnaire designed to assess the impact of Reinforcement Science Skills Project upon the secondary project teacher population was distributed to participating teachers through the school department chairmen. A total of 24 completed instruments were returned (of 75 produced for distribution). A copy of the questionnaire is included in Appendix D.

The sample responded as follows:

- Ten teachers indicated that they participated in science inservice workshops for a total of 25 times.
- Eighteen teachers viewed or listened to instructional improvement tapes 57 times.
- Eighteen teachers participated in individual inservice conferences 45 times.
- Twenty one teachers indicated that they received other DPPF project related services 59 times throughout the school year.

Table 9 illustrates the response to the specific items which document the attainment of the objective.

*Duplicated Count

TABLE 9

Responses to Secondary Science Teacher Survey
Scale = 5-1 (low)

ITEM	N	MEAN	RESPONDENTS RATING 4 OR 5 (%)
a. Using supplementary science materials to improve teaching methods.	20	4.30	85
b. Planning effective science lessons with structured lesson plans.	14	4.29	79
c. Teaching reading skill in the content area of science	15	4.33	80
d. Incorporating science process skills in daily planning and teaching.	11	4.55	100

CONCLUSIONS

The four elementary and three secondary objectives of the Reinforcement Science Skills project for the 1982-1983 academic year provided for the enhancement of the delivery of science instruction to students in grades 1 through 8 through the provision of materials and teacher training in the area of science instruction. Grades 5 and 7 were targeted (in selected schools) for the SCIS II--Energy Sources kit and the Life Science Kits for the intensive services while all schools availed themselves of inservice consultation and workshop activities.

At the elementary level, two objectives were partially attained while two were completely attained. The project's one product objective achieved well above the targeted gain score (18.30% as opposed to 10.0%) yet the targeted gain was only achieved by 65.2% of the sample tested. The concentrated inservice objective was also partially achieved insofar as the targeted response level was narrowly missed. The provision of consultative services for the "non-concentrated" schools was successful. Workshops as well as individual school visits and teacher conferences were evidenced throughout the school year and rated well within the goals of the stated objectives.

At the secondary level, one objective was not achieved while two were achieved. Students at the five schools chosen to participate in the concentrated service aspect of the project did not attain the targeted gain on a pre-post measure of their achievement. The provision of teacher training through workshops and consultative visits were very successful for the secondary project participants Both objectives evidenced successful achievement based on the stated criteria.

The following recommendations are made to maintain or improve this project.

Elementary

- Reduce the number of stated objectives by one. The inservice objectives would be more consistent and more easily interpretable if they were stated as those in the Secondary area. One objective could address the inservice activity associated with the concentrated activity while another could address inservice activities at non-concentrated schools.

- Continue to provide the workshop and consultative service for elementary teachers--especially those who need assistance in science content or method approached.

Secondary

- Continue to provide the workshops and consultative services for those teachers in need of assistance in the areas of science content or method approaches in teaching.

- Select an alternate exercise for those schools targeted for concentrated services. The life science kit appears to exceed reasonable grade level expectations.

APPENDIX A

CLEVELAND CITY SCHOOL DISTRICT
1982-1983 School Year

Elementary Schools

1. Adlai Stevenson
2. Alfred A. Benesch
3. Almira
4. Andrew J. Rickoff
5. Anthony Wayne
6. Anton Grdina
7. Artemus Ward
8. Benjamin Franklin
9. Bolton
10. Brooklawn
11. Buckeye-Woodland
12. Buhrer
13. Captain A. Roth
14. Case
15. Charles Dickens
16. Charles H. Lake
17. Charles Orr
18. Chesterfield
19. Clark
20. Corlett
21. Cranwood
22. Daniel E. Morgan
23. Denison
24. Dike
25. Douglas Mac Arthur
26. East Clark
27. East Madison
28. Emile B deSauze
29. Euclid Park
30. Forest Hill Parkway
31. Fullerton
32. Fundamental Ed. Center*
33. Garfield
34. George W. Carver
35. Giddings
36. Gordon
37. Gracemount
38. Halle
39. Harvey Rice
40. Hazeldell
41. Henry W. Longfellow
42. Hicks Montessori*
43. Iowa-Maple
44. John W. Raper
45. Joseph F. Landis
46. Kenneth W. Clement
47. Kentucky
48. Lafayette Academy*
49. Louis Agassiz
50. Louis Pasteur
51. Margaret Ireland
52. Marion Seltzer
53. Marion-Sterling
54. Mary Martin
55. Mary M. Bethune
56. McKinley
57. Memphis
58. Miles
59. Miles Park
60. Miles Standish
61. Milford
62. Moses Cleaveland**
63. Mound
64. Mt. Auburn
65. Mt. Pleasant
66. Nathaniel Hawthorne
67. Oliver H. Perry
68. Orchard
69. Paul L. Dunbar
70. Paul Revere
71. Riverside
72. Robert Fulton
73. Robinson G. Jones
74. Scranton
75. Stephen E. Howe
76. Tremont
77. Union
78. Valley View
79. Verda Brobst
80. Wade Park
81. Walton
82. Warner
83. Watterson-Lake
84. Waverly
85. Willow
86. William C. Bryant
87. William R. Harper
88. Woodland Hills

** Not eligible

Junior High Schools

1. Albert B. Hart
2. Alexander Hamilton
3. Audubon
4. Carl F. Shuler
5. Central
6. Charles Mooney
7. Charles Eliot
8. Clara Westropp
9. Empire
10. Franklin D. Roosevelt
11. Harry E. Davis
12. Joseph M Gallagher
13. Lincoln
14. Margaret Spellacy
15. Martin L. King
16. Nathan Hale
17. Newton D Baker
18. Patrick Henry
19. Robert H. Jamison
20. Thomas Jefferson
21. Whitney M. Young
22. Wilbur Wright
23. Willson

Sr. High Schools

1. Aviation*
2. Collinwood
3. East
4. East Technical
5. Glenville
6. James F. Rhodes
7. Jane Addams*
8. John Adams
9. John F. Kennedy
10. John Hay
11. John Marshall
12. Health Careers*
13. Lincoln-West
14. Max S. Hayes*
15. South
16. West Technical

*City-Wide Schools

1. A. G. Bell
2. Cleveland School of Arts
3. Cleveland School of Law
4. Cleveland School of Science
5. Sunbeam-Ortho. Hand

RESEARCH AND EVALUATION

THE REINFORCEMENT SCIENCE SKILLS PROJECT

WORKSHOP - I Secondary Science Teachers

11-23-82

Please indicate the clarity of and your understanding of the following workshop objectives by circling the appropriate number (5=highest; 1=lowest).

THIS WORKSHOP PROVIDED ME WITH:

A CLEAR UNDERSTANDING OF THE DPPF PROJECT	5	4	3	2	1	LITTLE UNDERSTANDING OF THE DPPF PROJECT
A THOROUGH KNOWLEDGE OF THE PROJECT'S OBJECTIVES	5	4	3	2	1	LITTLE KNOWLEDGE OF PROJECT OBJECTIVES
AN ABILITY TO INCORPORATE SCIENCE TEACHING METHODS INTO CLASSROOM MANAGEMENT STRATEGIES	5	4	3	2	1	LITTLE OR NO INSIGHT INTO SCIENCE CLASSROOM MANAGEMENT STRATEGIES
A PRACTICAL APPROACH TO SCIENCE LESSON PLANNING USING THE LESSON PLAN STRUCTURE	5	4	3	2	1	LITTLE OF NO INSIGHT INTO THE LESSON PLAN STRUCTURE

GENERAL REACTIONS (respond as above.)

PURPOSES WERE CLEAR	5	4	3	2	1	PURPOSES WERE UNCLEAR
CONTENT UNDERSTANDABLE	5	4	3	2	1	CONTENT CONFUSING
TIME SUFFICIENT	5	4	3	2	1	INSUFFICIENT TIME
OPPORTUNITY TO INTERACT	5	4	3	2	1	NO OPPORTUNITY TO INTERACT
NEW KNOWLEDGE ACQUIRED	5	4	3	2	1	NO NEW KNOWLEDGE ACQUIRED
INFORMATION PRACTICAL	5	4	3	2	1	INFORMATION IMPRACTICAL
SESSION BENEFICIAL	5	4	3	2	1	SESSION OF NO BENEFIT

COMMENTS:

APPENDIX C

CLEVELAND PUBLIC SCHOOLS

RESEARCH AND EVALUATION

THE REINFORCEMENT SCIENCE SKILLS PROJECT

WORKSHOP - II Secondary Science Teachers

11-30-82

Please indicate the clarity of your understanding of the following workshop objectives by circling the appropriate number (5=highest; 1=lowest).

THIS WORKSHOP PROVIDED ME WITH:

A CLEAR UNDERSTANDING OF THE DPPF PROJECT	5	4	3	2	1	LITTLE UNDERSTANDING OF THE DPPF PROJECT
AN UNDERSTANDING OF A DIRECTED READING LESSON	5	4	3	2	1	LITTLE UNDERSTANDING OF DIRECTED READING LESSON.
THE ABILITY TO INTEGRATE READING SKILLS WITH SCIENCE CONTENT	5	4	3	2	1	LITTLE ABILITY TO INTEGRATE READING SKILLS WITH SCIENCE CONTENT
THE ABILITY TO INCORPORATE PROCESS SKILLS IN DAILY SCIENCE PLANNING AND TEACHING	5	4	3	2	1	LITTLE ABILITY TO INCORPORATE PROCESS SKILLS IN DAILY SCIENCE PLANNING AND TEACHING
AN ABILITY TO INCORPORATE SCIENCE TEACHING METHODS INTO CLASSROOM MANAGEMENT STRATEGIES	5	4	3	2	1	LITTLE OF NO INSIGHT INTO SCIENCE CLASSROOM MANAGEMENT STRATEGIES

GENERAL REACTIONS (respond as above.)

PURPOSES WERE CLEAR	5	4	3	2	1	PURPOSES WERE UNCLEAR
CONTENT UNDERSTANDABLE	5	4	3	2	1	CONTENT CONFUSING
TIME SUFFICIENT	5	4	3	2	1	INSUFFICIENT TIME
OPPORTUNITY TO INTERACT	5	4	3	2	1	NO OPPORTUNITY TO INTERACT
NEW KNOWLEDGE ACQUIRED	5	4	3	2	1	NO NEW KNOWLEDGE ACQUIRED
INFORMATION IMPRACTICAL	5	4	3	2	1	INFORMATION IMPRACTICAL
SESSION BENEFICIAL	5	4	3	2	1	SESSION OF NO BENEFIT

THE REINFORCEMENT SCIENCE SKILLS PROJECT

Inservice Workshops

School_____ Date_____

Grade_____

Directions: Please give your impressions of today's session by circling the number along each continuum which most closely represents your feelings concerning each item. Note that a "5" represents the most positive response, while a "1" represents the most negative response.

PURPOSES WERE CLEAR	5	4	3	2	1	PURPOSES WERE UNCLEAR
CONTENT UNDERSTANDABLE	5	4	3	2	1	CONTENT CONFUSING
TIME SUFFICIENT	5	4	3	2	1	INSUFFICIENT TIME
EFFECTIVE DISCUSSION	5	4	3	2	1	INEFFECTIVE DISCUSSION
NEW KNOWLEDGE ACQUIRED	5	4	3	2	1	NO NEW KNOWLEDGE ACQUIRED
INFORMATION PRACTICAL	5	4	3	2	1	INFORMATION IMPRACTICAL
SESSION BENEFICIAL	5	4	3	2	1	SESSION OF NO BENEFIT

. List one-two commendable points of this workshop:

_____

_____

_____

. List recommendations to improve future workshops:

_____

_____

_____

COMMENTS:

_____

_____

APPENDIX C

RESEARCH AND EVALUATION

THE REINFORCEMENT SCIENCE SKILLS PROJECT

WORKSHOP - I Secondary Science Teachers

11-23-82

Please indicate the clarity of and your understanding of the following workshop objectives by circling the appropriate number (5=highest; 1=lowest).

THIS WORKSHOP PROVIDED ME WITH:

A CLEAR UNDERSTANDING OF THE DPPF PROJECT	5	4	3	2	1	LITTLE UNDERSTANDING OF THE DPPF PROJECT
A THOROUGH KNOWLEDGE OF THE PROJECT'S OBJECTIVES	5	4	3	2	1	LITTLE KNOWLEDGE OF PROJECT OBJECTIVES
AN ABILITY TO INCORPORATE SCIENCE TEACHING METHODS INTO CLASSROOM MANAGEMENT STRATEGIES	5	4	3	2	1	LITTLE OR NO INSIGHT INTO SCIENCE CLASSROOM MANAGEMENT STRATEGIES
A PRACTICAL APPROACH TO SCIENCE LESSON PLANNING USING THE LESSON PLAN STRUCTURE	5	4	3	2	1	LITTLE OF NO INSIGHT INTO THE LESSON PLAN STRUCTURE

GENERAL REACTIONS (respond as above.)

PURPOSES WERE CLEAR	5	4	3	2	1	PURPOSES WERE UNCLEAR
CONTENT UNDERSTANDABLE	5	4	3	2	1	CONTENT CONFUSING
TIME SUFFICIENT	5	4	3	2	1	INSUFFICIENT TIME
OPPORTUNITY TO INTERACT	5	4	3	2	1	NO OPPORTUNITY TO INTERACT
NEW KNOWLEDGE ACQUIRED	5	4	3	2	1	NO NEW KNOWLEDGE ACQUIRED
INFORMATION PRACTICAL	5	4	3	2	1	INFORMATION IMPRACTICAL
SESSION BENEFICIAL	5	4	3	2	1	SESSION OF NO BENEFIT

COMMENTS:

APPENDIX C

CLEVELAND PUBLIC SCHOOLS

RESEARCH AND EVALUATION

THE REINFORCEMENT SCIENCE SKILLS PROJECT

WORKSHOP - II Secondary Science Teachers

11-30-82

Please indicate the clarity of your understanding of the following workshop objectives by circling the appropriate number (5=highest; 1=lowest).

THIS WORKSHOP PROVIDED ME WITH:

A CLEAR UNDERSTANDING OF THE DPPF PROJECT	5	4	3	2	1	LITTLE UNDERSTANDING OF THE DPPF PROJECT
AN UNDERSTANDING OF A DIRECTED READING LESSON	5	4	3	2	1	LITTLE UNDERSTANDING OF DIRECTED READING LESSON.
THE ABILITY TO INTEGRATE READING SKILLS WITH SCIENCE CONTENT	5	4	3	2	1	LITTLE ABILITY TO INTEGRATE READING SKILLS WITH SCIENCE CONTENT
THE ABILITY TO INCORPORATE PROCESS SKILLS IN DAILY SCIENCE PLANNING AND TEACHING	5	4	3	2	1	LITTLE ABILITY TO INCORPORATE PROCESS SKILLS IN DAILY SCIENCE PLANNING AND TEACHING
AN ABILITY TO INCORPORATE SCIENCE TEACHING METHODS INTO CLASSROOM MANAGEMENT STRATEGIES	5	4	3	2	1	LITTLE OF NO INSIGHT INTO SCIENCE CLASSROOM MANAGEMENT STRATEGIES

GENERAL REACTIONS (respond as above.)

PURPOSES WERE CLEAR	5	4	3	2	1	PURPOSES WERE UNCLEAR
CONTENT UNDERSTANDABLE	5	4	3	2	1	CONTENT CONFUSING
TIME SUFFICIENT	5	4	3	2	1	INSUFFICIENT TIME
OPPORTUNITY TO INTERACT	5	4	3	2	1	NO OPPORTUNITY TO INTERACT
NEW KNOWLEDGE ACQUIRED	5	4	3	2	1	NO NEW KNOWLEDGE ACQUIRED
INFORMATION IMPRACTICAL	5	4	3	2	1	INFORMATION IMPRACTICA.
SESSION BENEFICIAL	5	4	3	2	1	SESSION OF NO BENEFIT

APPENDIX D

DPPF

SECONDARY REINFORCEMENT SCIENCE

Cleveland Public Schools

1982-1983

Science Teacher Survey

To evaluate the impact of the DPPF Reinforcement Science Project, you are asked to respond to the items on this survey. Any suggestions you can make to improve the project will be appreciated.
COMPLETE-FOLD-STAPLE-MAIL

1. How many times during the 1982-1983 school year did you:

   a. Participate in science inservice workshops? _____

   b. View video tapes/listen to cassettes to improve instructions? _____

   c. Receive other DPPF project related services? _____

   d. Participate in individual inservice conferences. _____

2. Please check (✓) the DPPF Project target area(s) in which you received assistance. For the areas checked, rate the effectiveness of the service by circling the appropriate rating using this scale:

	5	4	3	2	1
	Very effective				Very ineffective
_____ a. Using supplementary science materials to improve teaching methods.	5	4	3	2	1
_____ b. Planning effective science lessons with structured lesson plans.	5	4	3	2	1
_____ c. Teaching reading skills in the content area of science.	5	4	3	2	1
_____ d. Incorporating science process skills in daily planning and teaching.	5	4	3	2	1

3. What was the most beneficial aspect of the DPPF Project?

_____

_____

_____

4. What change(s) could you suggest to improve the DPPF Project?

_____

_____

CONTINUE ON BACK IF NECESSARY